

SPECIFICATION FOR APPROVAL

CUSTOMER: _____

MODEL NO: U15QT-6086A

PART NO : SBM-U15QT6086A-U-01

MODEL NAME: 15W constant frequency voltage control double coil

REVISION: A0

DATE: 2023-12-21

APPROVED SIGNATURES

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Model No.	U15QT-6086A	Model Name	15W constant frequency voltage control double coil
Part No.	SBM-U15QT6086A-U-01	Size	L107.4 ※ W52 ※ T8.5mm

Product Specification

產品規格書

Product name/產品名稱: 15W constant frequency voltage control double coil

Model No/ 產品型號 : U15QT-6086A

File number /文件編號: _____

Revision/版本號 : A0

Date/日期 : 2023-12-21



APPROVED BY 批 准	CHECKED BY 審 核	DESIGNED BY 制 作

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Catalogue/目錄

1. Scope/概述	5
2. Product Characteristic / 產品特點	5
3. Performance Parameter / 性能參數	5
4. Safety Control/安全機制	6
4.1. Short Circuit Protection/短路保護	6
4.2. Over Current Protection/過流保護	6
4.3. Overvoltage Protection/过压保护	6
4.4. Foreign Object Detect (FOD)	6
4.5. Over-temperature Protection/過溫保護	7
5. Reliability Requirements / 可靠性要求	7
6. Environment Requirement / 環境要求	7
7. Execution Standards/執行標準	8
8. Photo of Product/產品照片	8
9. Module/模組	9
10. Indicator light 指示燈	11
11. Attentions 使用注意事項	11
12. Weight / 重量	11
13. Statement / 聲明	11

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1. Scope/概述

The U15QT-6086A is a multi-functional fast charge wireless charging transmitter module that complies with the WPC_Qi 1.2.4 certification parameters: its transmission efficiency curve reaches 70% 5%at its highest point, providing up to 15W of transmission power. It can power or charge any WPC-Qi certified product; It also provides fast wireless charging for Samsung® and iPhone® mobile phones.

U15QT-6086A 是一款符合 WPC_Qi 1.2.4認證參數的多功能快充無線充電發射模組：其傳輸效率曲線最高點可達70%±5%，可提供高達15W的傳輸功率。它可以對任何WPC-Qi認證產品供電或充電；還能夠三星® 和 iPhone® 手機提供快速無線充電。

2. Product Characteristic / 產品特點

- ◆ QC3.0/PD3.0 power communication protocol
QC3.0 /PD3.0 電源通信協議；
- ◆ DC12V direct power supply
DC12V 電源直接供電；
- ◆ Meets Qi 1.2.4 certification requirements and is compatible with Samsung® and iPhone® mobile fast charging .
符合 Qi 1.2.4 認證要求並相容三星® 和 iPhone® 手機快速充電；

3. Performance Parameter / 性能參數

3.0	Power input protocol / 電源輸入協定	QC3.0/ PD3.0
3.1	Input voltage & current / 輸入電壓電流	DC12V/2.0A、PD12V/2.0A、QC12V/2.0A
3.2	Working voltage¤t / 工作電壓電流	DC12V/1.8A、PD12V/1.8A、QC12V/1.8A
3.3	Wireless charging output power 無線充電輸出功率	5W/7.5W/10W/15W
3.4	Power Transfer Efficiency / 轉換效率	70% ±5%
3.5	5W/10W/15W Frequency / 5W/10/15W 頻率	frequency conversion 110KHz-205KHz / 變頻 110KHz-205KHz
3.6	Apple 7.5W frequency/蘋果 7.5W 頻率	Constant frequency 127.7KHz / 定頻 127.7KHz
3.7	Ripple noise / 紋波及噪音	≤ 5%
3.8	Operating temperature / 工作溫度	5-25℃
3.9	Relative humidity / 相對濕度	40%~60%

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4. Safety Control/安全機制

4.1. Short Circuit Protection/短路保護

In the case of short-circuit at the receiver output, the transmitter stop output. When removed the receiver or short circuit, the transmitter will resume normal operation.

在接收端輸出短路的情況下，發射端停止輸出。當移除接收或者短路解除時，發射端將恢復正常工作。

4.2. Over Current Protection/過流保護

When the receiver load exceeds the rated value(110% - 130%), the overcurrent protection is triggered and the transmitter stops working. When removed the receiver, the transmitter will resume normal operation.

當接收器負載 > 額定值的 110% - 130% 時，觸發過電流保護，發射端停止工作，當接收器被移除時，發射端將恢復正常工作。

4.3. Overvoltage Protection/过压保护

The product would stop working when the input voltage exceeds the rated value (13V). The Product would be restarted working when the voltage returns to the set value range.

P/S: The input voltage shall not exceed 13.1V in case damage the product.

輸入端超过设定过压电压值 13V 时，发射端停止工作。电压恢复设定值范围时重新启动工作。

注意：输入电压不可以超过 13.1V，以防损坏本产品。

4.4. Foreign Object Detect (FOD) (1 RMB coin as the standard.)

異物檢測（以一元 RMB 硬幣為標準。）

4.4.1 When placing the coin onto the center of the product under no-load condition, the transmitter detected foreign object and reports an error, then stops working. Removes the foreign object to resume normal operation.

空載時放置產品中心，發射端檢測到異物並報錯，停止工作，移除異物可恢復正常工作。

4.4.2 When placing the load and coin together onto the center of the product, an error is reported within 10s (time varies with different mobile phone models) and the output is closed.

Removes the foreign object to resume normal operation.

負載和硬幣一起放置產品中心時，10 秒（不同手機型號時間不同）之內報錯並關閉輸出，移除異物可恢復正常工作。

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4.5. Over-temperature Protection/過溫保護

4.5.1. Wireless charging over-temperature protection/無線充電過溫保護

The NTC temperature protection of the PCBA is $65 \pm 5^{\circ}\text{C}$ (5W/7.5W/10W) $80^{\circ}\text{C} \pm 5^{\circ}\text{C}$ (15W). The transmitter stops working when the temperature exceeds the value. Resets the receiver or cools to $55-60^{\circ}\text{C}$, the transmitter returns to normal operation (optional replacement with external NTC)

PCBA 貼片 NTC 溫度保護設定值為 $65 \pm 5^{\circ}\text{C}$ (5W/7.5W/10W) $80^{\circ}\text{C} \pm 5^{\circ}\text{C}$ (15W)，當溫度超過設定值，發射端停止工作，重新放置接收或者降溫至 $55-60^{\circ}\text{C}$ 時，發射器恢復正常工作。(可選擇更換成外接 NTC)

5. Reliability Requirements / 可靠性要求

5.1. Reliability Test/可靠性測試

Please refer to Link Com's reliability standard and reliability test Report.

請參考聯寶標準《可靠性測試規範》與《可靠性測試報告》

6. Environment Requirement / 環境要求

6.1 Operating Temperature and Relative Humidity/操作溫度和相對濕度 $5^{\circ}\text{C}-25^{\circ}\text{C}$ / RH40~60%

6.2 Storage Temperature and Relative Humidity/儲存溫度和相對濕度 $0^{\circ}\text{C}-35^{\circ}\text{C}$ / RH20~80%

6.2.1 Avoid direct exposure to the storage environment, and do a good temperature and humidity control, room temperature should be controlled at $5^{\circ}\text{C}-25^{\circ}\text{C}$, relative humidity RH40~60%. In order to maintain good functionality of the product, please observe the following storage conditions. 儲存環境應避免產品受陽光直接照射，並作好溫濕度管控，室溫宜控制在 $5^{\circ}\text{C}-25^{\circ}\text{C}$ / RH40~60%。為使產品維持良好之功能性，請確實遵守以下保存條件

6.2.2 Keep away from high humidity, salt spray or oil spray. 儲存需避開高濕，鹽霧或油霧之環境

When storing, the storage environment temperature should be avoided too drastic, and the humidity should be avoided too high or too low. High humidity and large temperature difference tend to cause water Vapor condensation phenomenon, too low humidity easily cause the high electrostatic strength. Therefore, humidity will cause the electron ionization, and eventually cause the product functional abnormalities. 儲存時應避免儲存環境溫度變化過於激烈，同時避免濕度過高或過低。濕度過高和溫差過大容易導致水蒸氣凝結現象，濕度過低容易導致靜電強度過高。故濕度會造成電子遊離，最終導致產品功能性異常。

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7. Execution Standards/執行標準

7.1. EMC Standards 電磁相容標準

EN55032	EN55035
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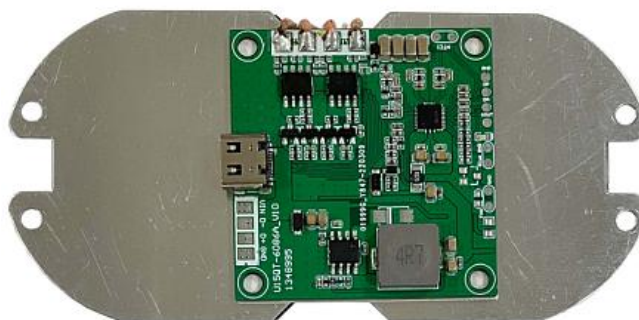
7.2. WPC1.2.4_Qi Standards/ WPC1.2.4_Qi 标准

8. Photo of Product/產品照片

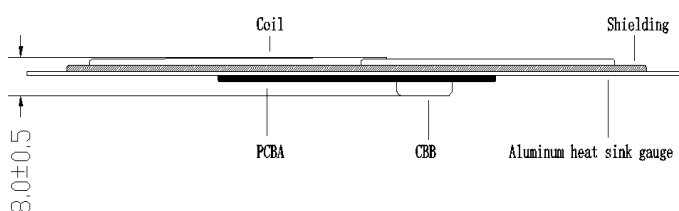
Size :L107.4 ※ W52 ※ T8.5mm



Module Front Side 模組前面



Module Back Side 模組後面



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9.Module/模組

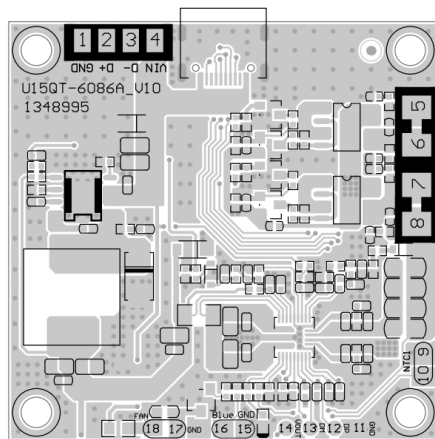
9.1. Product design proposal / 產品設計要求

According to the standardization of Qi, Please note below 4 points :

為了要符合 Qi 的標準，有 4 個專案要注意：

1. The distance between Tx Coil with PCB and other metal components is Min: 4.5mm/
輸出線圈，PCB 和其他金屬部件之間的最小距離：4.50mm；
2. The distance between the surface of Tx coil and the surface of product (Working Face) is 3.0+0.5-0.2mm, which means the thickness of the working face plastic is not more than 2.25mm;
Tx 線圈表面和產品的表面之間的距離（正面）是 3.0+0.5-0.2 mm，即正面塑膠的厚度不超過 2.25mm
3. The surface distance between Tx Coil and Rx Coil is 3.0 – 4.5mm
輸出線圈和接收線圈之間的表面距離為 3.0– 4.5mm
4. In order to pass EMI, it is recommended to use a DC 12V power supply plus a common mode inductor to connect the PCBA power supply.
為了好通過 EMI，建議用 DC 12V 的電源外加共模電感連接 PCBA 的電源。

9.2 PCBA Port Functional Illustration/PCBA 功能說明



PCBA 圖

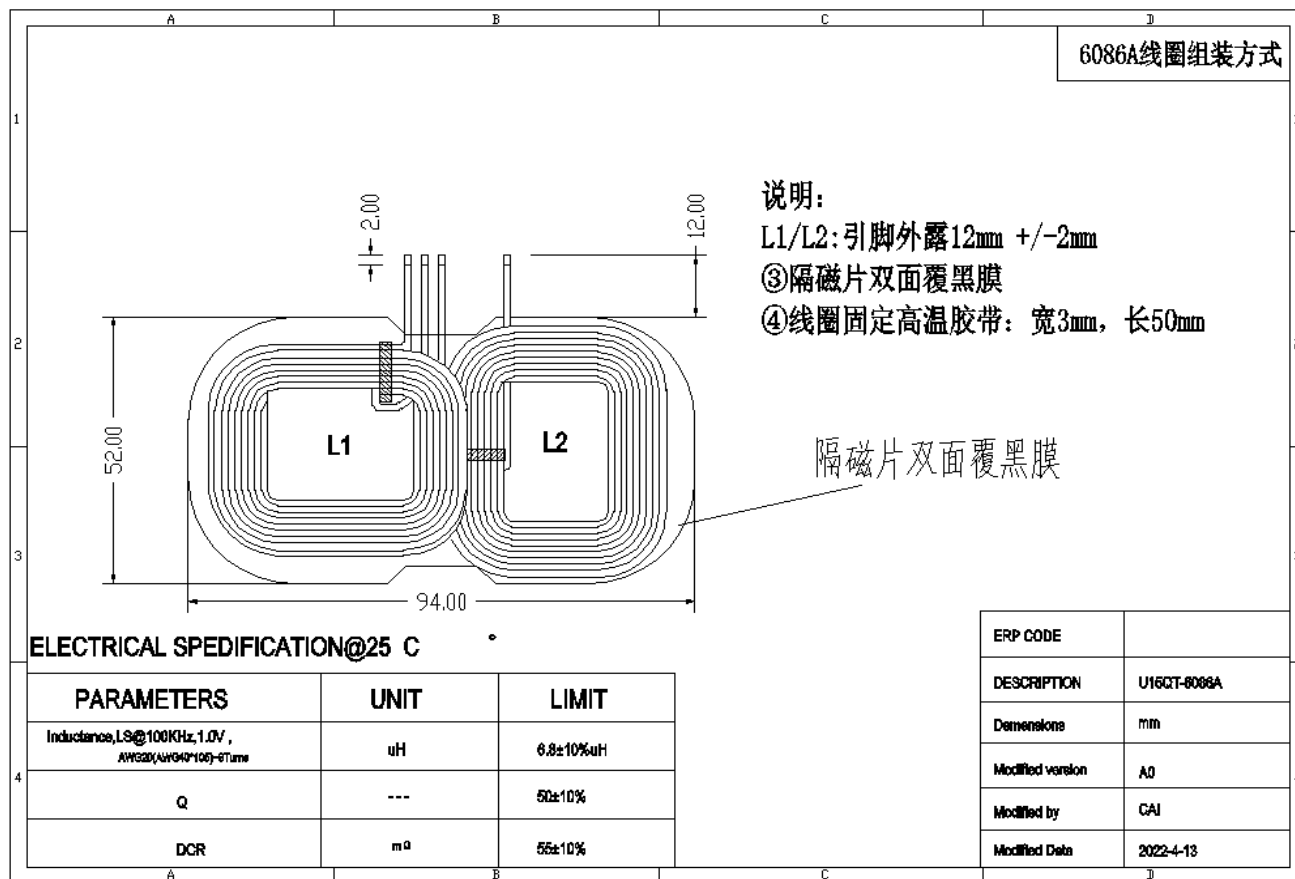
PCBA Size: 44(±0.5)*45(±0.5)*3.8 (±0.2)mm

Port	Pin1	Pin2	Pin3	Pin4	Pin5	Pin6	Pin7
Function	GND	D+	D-	VIN	CoilL2_1	CoilL2_2	CoilL1_1
Port	Pin8	Pin9	Pin10	Pin11	Pin12	Pin13	Pin14
Function	CoilL1_2	NTC-	NTC+	P1 _GND	P1 _DM	P1 _DP	P1 _VOUT
Port	Pin15	Pin16	Pin17	Pin18			
Function	LED_GND	LED_Blue	FAN_+	FAN_ GND			

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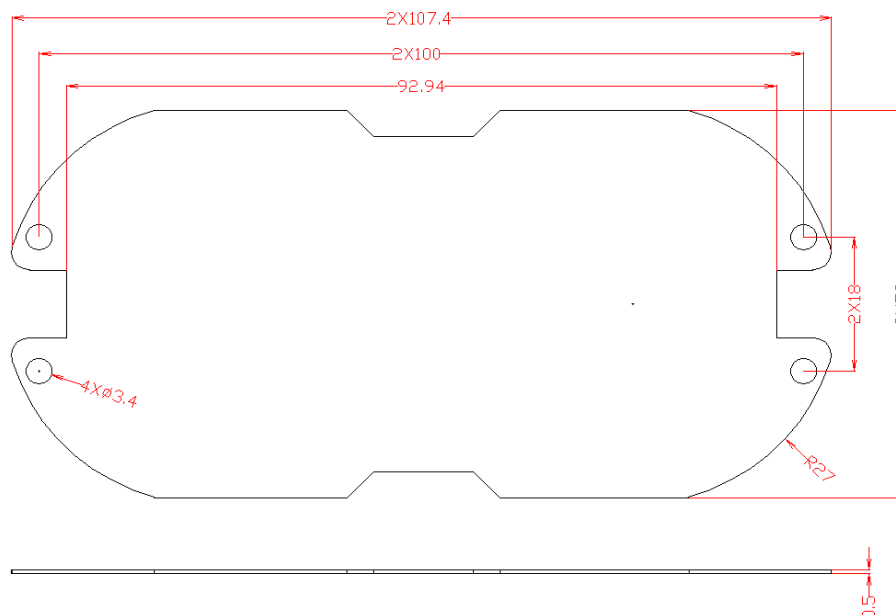
9.3. Tx_Coil Spec : TX 線圈規範

Coil + Shielding : 93(±0.5)*52(±0.5)*4.0(±0.5)mm



9.4. Aluminum heat sink gauge Spec 铝散热片规格

107.4(±0.5)*52(±0.5)*0.5(±0.1)mm



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10. Indicator light 指示燈

- ◆ Standby: LED light is not on / 待機：無燈
- ◆ Charging:Pulsing Blue LED / 充電時：藍燈常亮
- ◆ Charge Complete: Blue & Blue LED Off / 充電完成：藍燈熄滅
- ◆ FOD:Blinking Blinking Blue LED / 檢測到異物：藍燈閃爍

11. Attentions 使用注意事項

- ◆ Please use the correct rated AC Adapter, to ensure the normal function.
請使用配置的正确規格火牛，保證功能正常；

12. Weight / 重量

46^{±2} g

13. Statement / 聲明

All rights reserved byLinkCom Manufacturing Co., Ltd. for all of this specification for approval.
About warranty, please refer to LinkCom company warranty policy.